Further validation of the affective bias test for predicting antidepressant and pro-depressant risk.

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Affective biases are known to be influenced by emotional state. Recent studies suggest that negative affective biases in memory and decision-making contribute to the cause, perpetuation and treatment of mood disorders in humans. Similar affective biases have been observed after pharmacological and social manipulations of the affective state in non-human animals, in rats. It is suggested that changes in circulating hormone levels, especially gonadal hormones influence emotional behaviour and memory. The affective bias test (ABT) is a rodent assay translated from clinical observations in patients with mood disorders and evidence that they experience impairments in reward-related learning and memory. It is a bowl digging task that uses a within-subject study design where animals learn to associate different digging substrates, encountered on different days, with the same value rewarding outcome (food reward pellet) under control/vehicle conditions or following manipulation/treatment. Choice bias is measured, by presenting the two previously reinforced digging substrates at the same time and biases are observed as an increase or decrease in relative value associated to each experience. Data obtained from ABT have shown that affective biases are observed following acute treatments with a range of conventional antidepressants eg. fluoxetine, venlafaxine; pro-depressants eg. rimonabant, retinoic acid; gonadal hormones and their antagonists, and manipulations eg. restraint stress, social play. Our experimental data also support recent findings that hormones play a role in formation of the affective biases in rats. The task exhibits good predictive and translational validity. The ABT has a medium to large effect sizes across different rodent strains and is effective in males and females.